INSECTS VISITING BLOOM OF WITHE-ROD *VIBURNUM CASSANOIDES* L. IN THE ORONO, MAINE AREA[1]

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ABSTRACT: Insects visiting flowers of *Viburnum cassanoides* L. were collected throughout its bloom period. Representatives of five insect orders and 33 families were identified including four families of native bees which may be the most important pollinators. Cerambycidae and Syrphidae were well represented in numbers of individuals and species, and two new species of Syrphidae were found.

Viburnum cassanoides L., withe-rod, is a woody shrub, common in the northeastern United States and frequently grows at the margins of wooded areas, along roadsides, and in larger clearings. During bloom its small white flowers are produced in clusters (cymes) two to four inches in diameter. Experiments by Miliczky and Osgood (1979) demonstrated its dependence upon insects for pollination. Their work also showed that an operational spray of Sevin-4-oil® for spruce budworm control was detrimental to native bees, the most important insect pollinators, and that fruit set of *V. cassanoides* was adversely affected. Fruit set in sprayed areas was less than 1/5 that in control areas. Of the many species of bees collected during that study, those in the genus *Andrena* were by far the most abundant, followed in order by *Dialictus* spp. and parasites in the genus *Nomada.*

Casual observations and limited collecting during 1977 showed that large numbers of small flies and several species of small beetles were associated with the bloom, but native bees, syrphid flies, and larger species of beetles were few in number, or absent. The principal objectives of the current study were to determine the array of bees and other insects which visit flowers of *V. cassanoides,* and if present, to determine the species of andrenids and some of the other apparently important pollinator groups. The andrenid species found on *V. cassanoides* could then be compared with those collected in Malaise traps in the study by Milickzy and Osgood (1979). Information on other visitors would also suggest additional insect groups to study in future work on the effect of insecticides on fruit set of this species.

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MATERIALS AND METHODS

The study was conducted from June 14 to July 1, 1978 when withe-rod was in bloom. Smaller species of insects were collected from blooms with a sweep net, or entire flower clusters were placed in a killing jar. Larger beetles were hand-collected and many bees and syrphids were selectively captured with a net as different species were observed. With the exception of Empididae, which were preserved in alcohol, all specimens were pinned, and all pinned specimens were examined under a microscope for the presence of pollen. Most specimens were taken in Orono on the University of Maine campus, and additional specimens were collected in Passadumkeag about 20 miles north. Collections were made throughout the day on most days of the bloom period, weather permitting.

RESULTS AND DISCUSSION

Extensive collections of insects visiting the bloom of *V. cassanoides* showed that several groups were much better represented than we previously thought. More than 16 species of native bees were collected, and 8 of the 11 species of andrenids collected were among those taken in Malaise traps by Miliczky and Osgood (1979).

Members of the genus *Dialictus* and other Halictidae were commonly seen on the bloom but the genus *Nomada* was not observed. Ten species of cerambycids and 32 species of syrphids, including 2 new species, were also collected. In addition, representatives of 28 other families were found on the bloom. Many of these were apparently casual visitors playing little, if any, role in pollination, although Empididae were particularly abundant. Collections in other areas would undoubtedly yield many additional species.

Many species of native bees, syrphid flies and cerambycid beetles were carrying pollen loads or were liberally dusted with pollen and may be the most important groups of pollinators of *V. cassanoides.* But native bees, with their highly pubescent bodies, well-known behavior patterns when collecting food for their young, and the frequency with which they were seen on bloom, may be of primary importance in pollination of this plant.

Following is a list of insects collected on *V. cassanoides* in this study. Those marked with an asterisk were bees carrying pollen loads or bees and other insects liberally dusted with pollen. All specimens are deposited in the collection of the Department of Entomology, University of Maine at Orono except syrphids noted in the list as "kept" which are in the USNM collection.

Insects Collected on Bloom of *V. cassanoides*

Hemiptera
Miridae
Lygaeidae

Homoptera
Cicadellidae

Coleoptera
Scarabaeidae
Hoplia trifasciata Say
Trichiotinus affinis (Gory & Percheron)

Elateridae
Ampedus ? *rubricus* Say
*Miscellaneous – several species

Lampyridae
Photuris pennsylvanica (DeGeer)

Cantharidae
Cantharis fraxini Say
C. scitulus Say

Cephaloidae
Cephaloon sp.

Alleculidae
Isomira ? *quadristriata* Couper

Oedemeridae
Asclera ruficollis Say

Mordellidae
Anaspis ? *rufa* Say
Mordellistena sp.

Cerambycidae
**Anoplodera chrysocoma* (Kby.)
**A. mutabilis* (Newman)
**A. sexmaculata* (L.)
**A. vittata* (Swederus)
Cyrtophorus verrucosus (Olivier)
**Evodinus monticola* (Randall)
Grammoptera sp.
**Leptura lineola* Say
Molorchus bimaculatus Say
*Miscellaneous – 1 species

Chrysomelidae
Orsodacne atra (Ahrens)

Curculionidae – 4 species

Miscellaneous – 1 species

Diptera
Syrphidae
**Blera badia* (Walker)
Brachyopa notata O.S. – kept
Chalcosyrphus vecors (O.S.)
Cheilosia rita Curran
Cheilosia n. sp. – kept
Chrysogaster antitheus (Walker)
Doros aequalis Loew
**Eristalis arbustorum* (L.) – kept
**E. dimidiatus* Wied.
**E. obscurus* Telford
**E. transversalis* Wied.
Heringia sp.
**Mallota posticata* (Fabr.)
Metasyrphus lapponicus (Zett.)
Microdon ruficrus Will.
M. tristis Loew
Orthoneura pulchella (Will.)
Parasyrphus generalis (Will.)
Parasyrphus n. sp. – kept
**Sericomyia chrysotoxoides* Macq.
S. lata (Coquillet)
Somula decora Macq.
Sphegina rufiventris Loew
Syritta pipiens (L.)
Syrphus rectus O.S.
**Temnostoma alternans* Loew
T. balyras (Walker)
**T. barberi* Curran
**T. vespiforme* (L.)
Xylota atlantica Shannon
X. confusa Shannon
X. segnis (L.)

Empididae
Pipunculidae
Conopidae
Sepsidae
Anthomyiidae
Muscidae
Calliphoridae
Sarcophagidae

Hymenoptera
Tenthredinidae
Cynipidae
Gasteruptiidae
Formicidae
Vespidae
Odynerus sp.

Sphecidae
Ectemnius sp.

Colletidae
Hylaeus modestus modestus Say

Halictidae
Evylaeus quebecensis (Craw.)
**Lasioglossum* sp.
**Dialictus* spp.

Andrenidae
**Andrena algida* Smith
**A. alleghaniensis* Vier.
**A. carlini* Ckll.
**A. crataegi* Robt.
**A. cressoni* Robt.
**A. dunningi* Ckll.
**A. miranda* Smith
**A. miserabilis* Cresson
**A. regularis* Wall.
**A. nivalis* Smith
**A. vicina* Smith

Apidae
**Bombus terricola* Kirby

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